CHAPLIN

HIST. PATH

Some Diseases Mentioned in the Bible

By

Thomas Chaplin, M.D

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THOMAS CHAPLIN, M.D.

BEING A PAPER READ BEFORE THE VICTORIA INSTITUTE.

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ORDINARY GENERAL MEETING.*

REV. F. A. WALKER, D.D., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed.

The following paper, by Thomas Chaplin, M.D., on "Some Diseases mentioned in the Bible," was then read by the Secretary in the absence of the author :—

ON SOME DISEASES MENTIONED IN THE BIBLE.

By THOMAS CHAPLIN, M.D.

THE diseases mentioned in the Bible, especially those of the Old Testament, form a study of much difficulty. In some instances only the name of the disease is given, and the precise meaning of the term has to be inferred from its etymology, its rendering in early translations of the Scriptures, or the traditional interpretation of it handed down by the Jews. In other cases only certain local affections or symptoms are mentioned, which may or may not be sufficient to determine the nature of the disorder. Thus we are told that King Asa "in the time of his old age was diseased in his feet," but there is nothing to show what was the character of the disease; whilst the account in 2 Kings iv., 18–20 of the death of the Shunammite's child leaves little room for doubt that the cause of death was either sunstroke or inflammation of the membranes of the brain from exposure to the sun in the harvest field. Such cases are of frequent occurrence in that country at the present day. A further difficulty arises from the fact that, in early Biblical times, even the wise and learned did not yet know how to describe diseases with perspicuity and accuracy. Medicine as a science was not yet born. It is partly owing

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* Monday, May 12th, 1902.

to this that, even to the present hour, many doubts and differences of opinion exist as to the nature of the "leprosy," so called, of the thirteenth chapter of Leviticus. In some instances, also, such a word as "plague" or "pestilence" is used without any attempt to indicate its nature, and sometimes it is simply told that the angel of the Lord smote the people.

The age in which the New Testament was written was more cultured. The Greeks had then already taught the world to use terms with precision, and medical writers had learned to describe diseases accurately, and had given names to some which have continued in use to the present day. St. Luke was himself a physician, and his allusions to diseases are marked by the use of words and phrases which only a physician would have used. So marked is this characteristic of the third gospel and the Acts of the Apostles, that it has been put forward as evidence that these books were written by the same author, and that he must have been a medical man.

1. *Blindness.*—Diseases of the eyes are very prevalent in Egypt and Palestine. Probably in no other countries are there larger proportions of blind people. At the British Ophthalmic Hospital at Jerusalem almost every kind of eye disease comes under treatment. The most common is severe inflammation, which prevails especially in summer and autumn. It is thought to be caused by the "bloom" or the saccharine matter of fresh figs and grapes, by the intense light and heat of the sun, by air filled with dust, and especially by the damp winds of evening and the dew. It is very contagious, and a frequent cause of blindness, especially if neglected. It also produces chronic and often incurable disease of the insides of the eyelids, rendering people tender-eyed, as Leah was. Another kind produces small ulcers, which sometimes penetrate the cornea, and lead to the destruction of the sight. It is not uncommon to see two blind men walking hand in hand, each feeling the way with his staff. As in our own country, children are often leaders of the blind.

The man who was born blind probably had cataract, which is sometimes congenital. St. Paul's temporary loss of vision was miraculous; yet, as the Almighty frequently works His wonders through natural causes intensified or brought specially into operation, we may suppose that the "light from heaven above the brightness of the sun"

paralysed the optic nerve, and produced *amaurosis* or *gutta serena*. The blindness of the men of Sodom (Gen. xix., 11) and of the Syrian army (2 Kings vi., 18) was in all probability of a similar kind; perhaps also that of the sorcerer Elymas (Acts xiii., 11).

2. *The Boils and Blains* from which the Egyptians suffered because Pharaoh would not let the people of Israel go (Ex. ix., 10) were, in all probability, the result of blood-poisoning. For, first the waters of the Nile had been "turned into blood," and the fish in it died and stank; next came the plague of frogs, which "died out of the houses, out of the villages, and out of the fields. And they gathered them upon heaps: and the land stank"; after this followed the plagues of lice and flies, and then a "very grievous murrain" occurred, so that "all the cattle of Egypt died," and much polluted flesh was doubtless consumed by the people. In Hebrew the word translated "boils" is שְׁחִין (*shekhin*), which signifies to be hot, burning, or inflamed; and the "blains" אֲבַעְבֻּעֹת (rendered by the LXX. φλυκτίδες) are the pustules containing matter or a small "slough," which "break forth" from the inflamed base of the boil. In modern medical language this Greek word has its representative in a term which is defined to be "an acute pustule with an inflamed base." Boils are sometimes epidemic, even in civilised lands, and are very prevalent in such countries as Egypt. The kindred disease called *ecthyma* is also common. It has been suggested that these boils and blains were smallpox, or perhaps a kind of carbuncle (*anthrax*) allied to that caused by handling the fleeces of diseased sheep, and known in England as "woolsorter's disease" when occurring in man, and "splenic fever" in animals. But it is not certain that smallpox existed at that early period, and as none of the Egyptians are reported to have died of the "boils and the blains," it is probable that a less severe, but very painful and distressing malady is indicated. Yet it is remarkable that it affected animals as well as men.

3. *Bowel Disease. Bloody Flux.*—The disease threatened in the writing which came to King Jehoram from the prophet Elijah (2 Chr. xxi., 15) was apparently epidemic dysentery. "Until thy bowels fall out by reason of the sickness day by day" is a graphic popular description of one of the most serious symptoms of this disease. It is also scientifically correct in reference to those cases in which the lining

membrane of the bowels mortifies and is cast off. Dysentery is a very common disease in Palestine and other countries bordering on the Mediterranean, and is frequently accompanied by copious discharges of blood. The *bloody flux* of which St. Paul healed the father of Publius at Malta (Acts xxviii., 8) is called by this name and may have been of this character. But the use by St. Luke of the plural (πυρετοῖς) for the fever which attended it has been thought to indicate some form of remittent or intermittent fever. Possibly it was a case of typhoid (*enteric*) fever, in which hæmorrhage from the bowels is of frequent occurrence.

Herod Agrippa is said by Josephus (*Antiquities of the Jews*, xix., 8, 2) to have died of an acute and violent disease of the belly, which carried him off in five days. Whether this was dysentery or not it is difficult to decide, and as the disease was attended by another very remarkable symptom —"he was eaten of worms" (Acts xii., 23)—the subject will be discussed below. Among the symptoms of the complicated disorder of which Herod the Great died, ulceration of the bowels is mentioned, and the chief violence of the pain lay in the colon (Joseph. *ib.* xvii., 6, 5). Antiochus Epiphanes also is reported (2 Macc. ix., 5 *et seq.*) to have died of "a pain of the bowels that was remediless."

4. *Consumption.*—It may be doubted whether the word thus translated in Lev. xxvi., 16, refers to a disease or to a condition of social want and suffering. The LXX. has *ἀπορία*, the Vulgate *egestas*, both of which terms might be rendered "poverty." Consumption (*phthisis*), however, is not uncommon in Egypt and the coast towns of Palestine, and other forms of wasting diseases are frequently met with there.

5. *Demoniacal Possession.*—Much difference of opinion has existed with reference to this subject. On the one hand, the symptoms manifested by some persons said to have been possessed with a devil being not unlike the symptoms of insanity or epilepsy, or some allied disorder, the expression "possessed with a devil" has been thought to be merely the popular way of speaking made use of by the inspired writer, without indicating the actual existence of such possession. On the other hand, those instances in which the devils spoke, and especially that in which they besought the Lord to send them into the herd of swine, can be explained on no other supposition than that of actual demoniacal possession. Our Lord certainly recognized the fact of "possession" (Mark v.,

8, 9), and it cannot be supposed that He was ignorant of the true nature of these cases, or could give any countenance to popular error respecting them. It has been observed that it is chiefly at the time of our Saviour's ministry on earth that people are said to have been thus "possessed," and that the phenomenon ceased at an early period after His ascension, as if the prince of the devils had then been permitted to make special efforts to counteract the influence of the presence and power of the Son of God. If this is the right view, the question of demoniacal possession becomes removed from the category of mere bodily diseases, and is foreign to the subject of this essay.

In Palestine there still occur remarkable instances of mental and nervous disorder, which are ascribed by certain classes to possession; not always possession by a "devil," but by the spirit of some deceased person or of an animal. Such a spirit is called by the Jews *dibbuk*, something that *cleaves* or *sticks*.

6. *Fevers* of various kinds are exceedingly frequent in Mediterranean countries; and in Palestine itself, which has in its small extent a great variety of climatic conditions, almost all the known varieties of febrile disorder are met with, except one or two which occur only in the tropics. Typhus and typhoid, remittent and intermittent fevers in their several forms, scarlet fever, smallpox, measles, dengue (or break-bone fever, called by the Arabs "the father of knees," because of the knee-pains which accompany it), are some of the fevers which every now and then become epidemic, and (with the exception of dengue) lead to great destruction of life. There is reason for believing that many of these were known in ancient times, and are signified by various words used in the Holy Scriptures. The "fever," the "inflammation," and the "extreme burning" of Deut. xxviii., 22, are doubtless forms of fever known by those names at the time the book was written. קַדַּחַת (*kaddokhath*), translated "fever," is a word still in use with the same signification among the Jews of Eastern Europe and the Levant who mingle Hebrew with their ordinary speech, I have even heard it used in London. דַּלֶּקֶת (*daleketh*), "inflammation," probably indicates a violent fit of ague, as denoted by the ῥίγει of the LXX.; whilst חַרְחֻר (*harhūr*) may mean some internal inflammation, such as pneumonia or pleurisy, or possibly a cutaneous affection producing great

burning or irritation, like erysipelas, prickly heat, or itch (ψωρα), which is the rendering of the Septuagint. Rashi, the great Jewish commentator, calls it "a disease which makes the body very hot, and produces thirst for water."

There is nothing to show what kind of fever the mother-in-law of Peter (Matt. viii., 14) or the son of the nobleman at Capernaum (John iv., 52) were afflicted with, except that St. Luke calls the first "a great fever," and the severity of the latter may be inferred from the statement of the father that his son "was at the point of death." In all probability both were suffering from some grave form of continued fever, perhaps typhus or typhoid. There does not seem to be any ground for supposing that the disease was in either case intermittent fever, and that the subsidence of the fever was a natural termination of the paroxysm. The Greek physicians divided fevers into the *greater* and the *lesser*, and St. Luke would not have used the term "great fever" for an ordinary ague; whilst, as to the other case, boys seldom or never die of ague.

7. *Leprosy.*—Of all the diseases which afflict humanity, leprosy is one of the most terrible. It infects the whole body, producing hideous distortion of the features, falling of the hair of the eyebrows and face, swellings, ulcerations, contractions of the fingers and toes, which often drop off, leaving only the stumps of the hands or feet, loss of sensation, so that the affected parts can be burned without the patient feeling it, diminution of muscular power, hoarseness of voice, the sufferer speaking in a strange, unearthly whisper, a repulsive odour, and lingering death, which is usually preceded by a kind of dysentery. Two principal forms of the disease are described; one in which tubercles form in the skin of the face, ears, arms, and legs, and often in other parts of the body also, and the other attended by peculiar eruptions and ulcerations, with loss of sensation and muscular power. The former is called *tubercular*, the other *anæsthetic* leprosy. They do not appear to be essentially distinct diseases, as mixed cases occur partaking of the characters of both. Nothing can be more loathsome than persons in the advanced stages of this frightful malady, and in every age they have been objects of abhorrence, and forced to live apart from their fellow men. There is no reason to doubt that the lepers who sat at the gate of Samaria (2 Kings vii., 3), the kings Uzziah and Azariah, who "dwelt in a several house," the ten men who were healed by

our Lord on His way through Samaria (Luke xvii., 12–14), and others were afflicted with this disease.

But from ancient times down to a quite recent period, persons suffering from other loathsome diseases besides true "leprosy" or *elephantiasis* were banished from their homes and sent to live amongst the lepers. It is said that in Europe, at one time, as many as 75 per cent. of the inmates of the Lazar houses were not afflicted with *elephantiasis*.

A very great deal has been written about the leprosy of the Bible, more particularly with reference to "the law of the leper" in the 13th chapter of Leviticus. Yet it must be owned that the subject is even now by no means clearly understood. The circumstance that the expression נֶגַע צָרָעַת *neg'a tzar'aath*, has been rendered in the translations by the terms λεπρα, *lepra*, *leprosy*, appears to have caused much misunderstanding, and led expositors astray. *Lepra* is explained by all medical writers to be derived from λεπις, *a scale*, and it has therefore been supposed that this so-called "leprosy" must be one of the numerous skin diseases accompanied by the formation of scales on the surface of the cuticle. Yet there is not a word distinctly referring to scales in the whole chapter, though doubtless certain scaly diseases would be amongst those which were to be brought to the priest. Then, as the term "leprosy" is applied pretty generally to the dreadful disease known to physicians as *Elephantiasis Græcorum*, efforts have been made to bring the descriptions in Leviticus into accordance with the appearances of that disease, and this has proved a bewildering and hopeless task. *Neg'a tzar'aath* does not mean "leprosy" at all, but simply an evil or malignant plague or stroke, and the object in the first 44 verses of Leviticus xiii. is to lay down clearly and succinctly what appearances come under this head, and render the sufferer *tâmeh*, or unclean. No one disease is fully described, but a considerable number of diseased conditions is included, some clean and some unclean; *elephantiasis*, at least in some of its stages, being no doubt among them. The things which constituted the uncleanness appear to have been—(1) unsightliness; (2) loathsomeness, as from open sores; (3) contagiousness; and (4) an active force in the disease which caused it to spread.

The word נֶגַע *neg'a*, a plague, or stroke, is from נָגַע to touch, which in the Piel form means to strike. צָרָעַת *tzar'aath* is from צָרַע, which also means to strike, or strike down.

It is not, like *neg'a*, used in a general sense, but only as indicating a specific and malignant condition. It is, however, to be observed that this condition did not always arise from the same disease; just as a person may become *comatose*, or "insensible," from a number of different morbid conditions, so a man might become *matzoor'ah*, or "leprous," from different morbid conditions.

The words translated "a rising," a "scab," a "bright spot," were apparently general and popularly understood terms which included all the various forms of skin eruptions. The *saeth*, or rising, might be a pimple, a boil at its commencement, the papule with which the eruption of smallpox begins, the tubercle of tubercular, the papule or the "bleb" of anæsthetic leprosy, or any eruption elevated above the general level of the skin. The *sapakhath*, or scab, might be the scaly patches of psoriasis or eczema, the crusts of ecthyma, rupia, tinea (scalled head), or such an eruption as smallpox, chicken-pox, etc., whilst the *bahereth*, or bright spot would be any striking change in the colour of parts of the skin, whether white or red, and might include not only leuce, psoriasis, the dusky red eruption of tubercular leprosy, and the pale, slowly-spreading patches of the anæsthetic kind, but possibly even such eruptions as those of erysipelas, or measles. For it is to be noted that the diseases which were to be brought to the priest were not all chronic, much less incurable, affections. On the contrary, some of them were such as change either for the worse or the better in the course of seven or fourteen days, and even the graver kinds which had been adjudged "leprous," or at least some of them, were susceptible of cure.

The first and most remarkable of the diseases indicated as "unclean" was distinguished by a rising, a scab, or a bright spot, affecting the deeper layers of the skin, and turning the hair of the affected place white (ver. 2, 3). Such a disease was called by the ancient Greek physicians *leuce*, λεύκη, and by the Romans *vitiligo*. It is not infrequent in Palestine at the present day. The writer has seen several instances of it.*

At a period when these diseases were perhaps more common and more dreaded than they are now, any discoloured patch occurring on the skin would naturally arouse suspicion, and persons who were affected only with some

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* *Lancet*, 1868, p. 656, "On a case of Leuce." By Thomas Chaplin, M.D.

harmless and ephemeral eruption would often be brought to the priest by anxious or officious relations or neighbours. It is significant that the suspected person is not ordered to *come* to the priest, but to *be brought.*

The signs of a non-malignant or "clean" eruption were (ver. 6) that after a period of seven or fourteen days the spot was not deeper than the skin, did not spread, had no white hair in it, and was fading away (כֵּהָה, "somewhat dark," A.V.). This was merely "a scab," *sapakhath*, in which term, as already mentioned, many forms of skin affection might be included. But if this "scab" spread much abroad (ver. 8), it became unclean, even though it had no other unfavourable sign.

In verses 9–11 directions are given as to a "rising" in which the hair is turned white, and in which "quick, raw flesh." that is, excoriation or ulceration, had appeared. Whether this is the same disease as that of verse 3 it is not easy to determine. Probably it was. It is important to remember that the Lawgiver is treating the matter *judicially*, and that doubtless every effort would be made by afflicted persons to escape condemnation as unclean. The appearance of a pimple, pustule, or sore in an "old leprosy" might lead to the supposition that there had been a mistake in the *diagnosis*, that the case was not really one of *tzar'aath*, and hence a fresh appeal to the priest was enjoined, when the case was at once condemned if white hairs and raw flesh were present.

That a local outbreak of *tzar'aath* in the skin should be unclean, and that when it had covered all the skin it was to be pronounced clean (vers. 12, 13), seems at first somewhat puzzling. The explanation probably is that although, like all skin eruptions, it was regarded as unclean whilst spreading, for spreading was always an evil sign, it ceased to be so when it could no longer spread. There is no mention of white hairs in this case, which seems to be, not the severe and malignant *leuce*, but a form of "white disease," *leucopathia* or *albinism*, which is common in warm countries and is not of a malignant character, although unsightly, especially when portions only of the skin are turned white. Albinoes are usually born such, but in other instances the whiteness of the skin (*leucoderma*) comes on later in life, gradually spreading over the whole body.*

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* *Diseases of the Skin.* Erasmus Wilson. London, 1847. P. 701. *Ib.* H. Radcliffe Crocker. London, 1893. P. 183

Even this harmless affection becomes unclean if ulceration occurs (ver. 14).

Thus far the law of leprosy refers mainly to one diseased condition, namely, that in which there is a turning of portions of the skin, and of the hairs growing upon them, to white. It has been often said that this is a characteristic of anæsthetic leprosy. But the affected surface of the skin in anæsthetic leprosy becomes pale, not white, and the hairs upon it, if there are any, do not turn white. The Jewish tradition, indeed (Mishna, *Negaim*, i., 1), is that the signs of these "plagues" were of different degrees of whiteness, namely, a bright spot bright as snow; a rising like white wool or the shell of an egg; a spot whose whiteness was like wine mixed with snow, and another like blood mixed with milk. Yet it seems hardly possible that the eruption of anæsthetic leprosy can be included in the spreading whiteness alluded to in verses 12, 13, for it never spreads over the whole body, and if it did, the person would not be clean, but very decidedly unclean, from the ulcers and other symptoms which mark the disease.

At verse 18 we are introduced to a difficulty which would be sure to present itself from time to time. A person with the suspicious signs would affirm that the spot was merely the mark of a boil (*shekhin*) which was healed, and directions are given as to the means of deciding in such a case. Whether the expression "lower than the skin," שָׁפָל מִן הָעוֹר, denotes something different from "deeper than the skin," עָמֹק מֵעוֹר, is not quite clear. But probably the scar (*tzarebeth*) of the boil modified the appearance and induced an actual depression or "pitting" of the spot, like that which so often occurs after smallpox and *ecthyma*. The Arab writers described under the name *baras el abyad* or *white baras*, a disease which produced pits or hollows in the skin.*

In verse 24 another complication is dealt with. If there be a burning of fire, *mikvath aish* ("hot burning," A.V.), and the suspicious signs appear in it, the person is to be brought to the priest to be examined, and if the usual signs of white hair and deepness are there, he is to be condemned as unclean: it is *neg'a tzar'aath*, the plague of "leprosy." Nothing is said as to whether the burn was accidental or

* *Avicenna*, iv, 7, 2, 9.

intentional, and one cannot but suspect that a class of cases is referred to in which the anxious sufferer seeks to destroy the first signs of the dreaded disease by burning the affected part with a hot iron. The writer has known several instances in which the endeavour has been made to obliterate by this means the first signs of elephantiasis, and thus to prevent, or postpone, the person being sent away from his village into the abode of the lepers. Note in verses 21 and 22, 26 and 27, that "spreading" alone is sufficient ground for condemning the case as unclean, even though there be no white hairs, and the place be no lower than the other skin.

At verse 29 we come to a quite different kind of disease, namely, a plague upon the head or beard. The "yellow, thin hair" suggests at once a form of ringworm, which is described in almost the same words by modern physicians: the hairs "on the patch being of a yellowish-grey colour, dry, shrivelled, bent, and withered." The word translated "scall" signifies to pull out, and is remarkably appropriate to a disease in which the affected spot soon becomes "more or less denuded of hair." Spreading; the deep parts of the skin, that is, the true *dermis*, being affected; discoloured, weak, and brittle hairs; are still the signs by which the physician judges that this disease is not yet cured, and it is only when hair of the natural colour begins to grow on the affected spot that he pronounces the case healed. Other forms of spreading skin disease of the scalp and beard are doubtless included here. At verse 36 the priest is instructed not to look for yellow hair "if the scall be spread in the skin," the person being by that sign alone known to be unclean. It is noteworthy that these spreading diseases in which there is no yellow hair are not called *tzar'aath*, but only said to be "unclean" (ver. 36).

The harmless "freckled spot" in the skin (ver. 39) is still, in Arabic, called by the same name, *bohak* (بهق).

The white or reddish spot, or rising, in the bald head (vers 42–44), which is to be pronounced "utterly unclean," may be the tubercle of elephantiasis, or epithelial cancer, or some other kind of malignant sore or growth. King Uzziah's leprosy began in his forehead (2 Chron. xxvi., 19).

It may be remarked in passing that the extreme importance attached to the strict observance of the laws relating to leprosy (Deut. xxiv., 8) did not rest solely on sanitary considerations. Then, as in later times, "leprosy" seems to

have been looked upon as a type of impurity, perhaps of sin, and was, in certain instances, the immediate result of the divine displeasure, as in the case of Miriam (Numb. xii., 10), Gehazi (2 Kings v., 27), Azariah (2 Kings xv., 4, 5), and Uzziah (2 Chr. xxvii., 19).

8. *Lunacy.*—No doubt, as already remarked under "demoniacal possession," many who were "possessed with devils" manifested symptoms of lunacy or insanity. The child mentioned in Matt. xvii., 15, is thought by some to have been "epileptic," that being the commonly accepted signification of the Greek word employed. But "lunatic" is a literal translation of it; epileptics being supposed to be influenced by the moon. King Saul appears to have suffered for many years from intermittent attacks of the form of insanity known as *melancholia*, and seems to have ended his life by suicide, as such sufferers often do. King Nebuchadnezzar was afflicted with an aberration of intellect well known to those who make insanity their study. His pride and haughtiness; his delusion when he (probably) fancied himself an ox and ate grass; his neglect of his person, until "his hairs were grown like eagles' feathers, and his nails like birds' claws"; his slow recovery during a period of seclusion and freedom from care, resemble phenomena constantly observed among the insane at the present day.

9. *Palsy or Paralysis* is in its various forms the same everywhere, and only one or two cases mentioned in the Bible require a word of comment. The drying up of Jeroboam's arm was miraculous and supernatural. In ordinary cases of paralysis the muscles waste from inaction, but the process is gradual, whereas the wicked king's arm seems to have dried up suddenly and to have been as suddenly restored.

The impotent man who lay at the Pool of Bethesda and was healed by our Lord (John v., 2, 9) may have been suffering from a well-known disease in which there is progressive wasting of the muscles, producing inability to walk or stand, and eventually even to lift the hand to the mouth. Such cases often last many years. They are perhaps more frequent in Palestine than in the more northern regions of the temperate zone. The fact that this man's infirmity had existed for thirty-eight years accounts for his being more helpless than even the other impotent folk, and renders his sudden restoration to health and strength the more striking, The admonition given to this man: "sin no more lest a

worse thing happen to thee," seems to indicate that his disease was due to an immoral life; a not improbable circumstance. To another palsied person whom He healed at Capernaum our Lord said "thy sins be forgiven thee," as if his disease also was the result of wrong living. The writer has known similar cases which were certainly caused, at least partially, in this way.

The woman mentioned in Luke xiii., 11, who "had a spirit of infirmity eighteen years and was bowed together and could in no wise lift up herself," was probably suffering from the result of chronic inflammation of the bones of the spine, such as may not infrequently be seen in our own country. It occurs more especially in delicate people who stoop much at their daily work. Farm labourers are peculiarly liable to it as they grow old.

The "crookbackt" person of Lev. xxi., 20, may have suffered in this way, or may have had destructive disease of the vertebral bones, or been born a "hunchback."

10. *Pestilence and Plague* are frequently mentioned in the Bible, and in some instances the two terms are used as synonymous (1 Chron. xxi., 14, 22). Four out of the five Hebrew words translated plague are from roots signifying *to strike*, like the English word plague from *plaga* and πληγή. The disease to which this term is now restricted (in so far as it has reference to disease) is the terrible "bubo-plague" or "Oriental plague," which has been known for many centuries in Egypt and Syria, and was perhaps known in the time of the Exodus. But there is nothing to show whether the plagues of the Bible were of this kind. That with which the Israelites were punished after eating the quails (Num. xi., 31, *et seq.*) may not improbably have been caused by the flesh of those birds having become poisonous from their feeding on some poisonous food. Pliny refers to this danger from eating quails. Or it may have been that the flesh had undergone some septic change which led to the formation of compounds (*ptomaines*) very deleterious when eaten. Isolated cases of this sort occur in our day, especially with tinned provisions. If this great mortality may thus be referred to known and secondary causes, this does not in the least throw doubt on its having been inflicted by the hand of Jehovah Himself.

The question naturally arises whether cholera may not have been one of the forms of pestilence mentioned? We do not know. There is nothing to indicate such a disease,

And the probability is that cholera had not at that early period spread westward from its birthplace in India.

11. *Herod Agrippa's Disease* (Acts xii., 23).—Much ingenuity has been employed in endeavouring to fix upon a disease to which the description "eaten of worms" would apply. But the probability is that the worms did not constitute the disease itself, but were only an accidental (Providential) accompaniment of it. Josephus (*Antiq.* xix., 8, 2) states that Agrippa suffered from severe pains in his body, probably dysentery, and any excoriations which might be caused by the discharges would very likely become infested with "worms." Such occurrences are very common in those lands. Herod the Great suffered in the same way (Josephus, *Antiq.*, xvii., 6, 5), and Antiochus Epiphanes is reported (2 Maccab. ix., 5–9) to have died under similar conditions. The writer has seen many instances of the presence of "worms" (maggots) in wounds and excoriations, and the rapidity with which they develop is marvellous. In one case the worms were found burrowed in the "proud flesh" of a neglected wound in the scalp; in another two or three dozen were taken out of a deep ulcer in the cheek; in a third a fresh crop presented themselves every morning in ulcers between an old man's toes, much to the surprise and vexation of the nurse, who thought their appearance might be attributed to his want of care. The flesh of Job was "clothed with worms" (Job vii., 5). During the Crimean war, at one sad period when the wounded soldiers could not be attended to without delay, their wounds were found "crawling with insects."

12. *Hezekiah's sickness, shekhin*, was probably a severe carbuncle, such as often proves fatal. A plaster or poultice of figs is at the present day a common application to boils, carbuncles, and abscesses, in Palestine. It has, however, been suggested that the disease was quinsy: the words "like a crane or swallow, so did I chatter," indicating a change of voice like that produced by the latter affection.

13. *Job's Disease* is by some confidently assumed to have been elephantiasis, or true "leprosy," but the Hebrew word שחין, *shekhin*, which is applied to it, is universally allowed to mean a burning ulcer or boil, which is not a characteristic of elephantiasis. It is perhaps impossible to come to any certain conclusion with reference to the precise nature of the infliction, but the following considerations may lead to a probable opinion. (1) Although supernaturally inflicted,

there is no reason to suppose that the disease itself was of an unknown or supernatural character. (2) It was painful, unsightly, covering the whole body, and disfiguring the features. (3) It seems to have poured out matter or formed scabs, which the sufferer scraped off with bits of broken pottery, or the "scraping" may have been to allay itching. (4) It was accompanied by severe constitutional disturbance, producing loss of sleep; emaciation; depression of spirits; weariness of life; (5) The patriarch's system had no doubt been weakened by the bereavements and losses he had sustained.

All these symptoms are characteristic of the disease known as *ecthyma* in an aggravated form. A distinguished modern writer on skin diseases describes *ecthyma* as "an eruption of large pustules dispersed over the body and limbs, beginning with itching and tingling, then bursting and forming a yellowish-grey scab. When the scab is removed a painful, ulcerated, and often sloughing surface is exposed, the crust which afterwards forms over it being black, with thin and livid edges. It is slow in progress, very painful, and of long duration. This disease in its severe form is of a cachectic character, associated with symptoms of general disturbance of health, and more or less fever of the irritable or hectic kind."* We seem in this description to be reading a summary of the sufferings of Job.

Discussion.

The Chairman.—We are very much indebted to Dr. Chaplin for the light he has thrown on diseases recorded in Holy Writ and for his contribution to our knowledge of the Bible in regard to them derived from his long stay in Jerusalem and his exact medical knowledge of several of those diseases mentioned several centuries ago.

I shall await any remarks that any of you may like to make upon it.

Professor Lionel Beale, F.R.S., F.R.C.P., in response to the

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* *Diseases of the Skin.* Erasmus Wilson. London, 1868. Pp. 309–10.

Chairman, said: I am afraid I have very few remarks to make on Dr. Chaplin's most interesting paper, but perhaps I may be permitted to offer one or two general observations. It seems almost certain that some of the diseases which occurred in those early days afflict man now. Some of the features that are described are features with which we are acquainted, dysentery, for instance, and typhoid fever. Typhoid, dysentery, and perhaps, cholera occurred in those days, but the symptoms of course would be described somewhat differently. We must not forget that the treatment in ancient times was very different from that which we should now advocate, and the great care taken of the sick in our time is beyond comparison with anything that could then have been provided.

It may be said generally that diseases are much less severe and more under control than formerly, but the actual changes in the human body were probably in their nature much the same as regards the changes in the blood and the tissues and organs.

Again, there is one thing very remarkable to notice with regard to contagious diseases. It is only one person among many who falls a victim to many of the poisons, and in former days the active material which entered the body, was much more virulent than that which we meet with, and those ministering to the sick were much more likely to contract the disease than is the case now. But unfortunately it is not possible to determine who is and who is not susceptible. Some individuals seem exceptionally liable, while others seem almost proof against the influence of the poison, or its entrance into the body. What determines the unusual "susceptibility" or the resistance to attack is not certain. The only answer that I have ever heard to the question is that the individual attacked is "unduly susceptible"; or the equally vague suggestion that he is unusually "vulnerable"; but exactly what was meant by those who were so much more learned than the rest of us has not been made clear. That some of us do escape in a wonderful way in spite of exceptional exposure is certain. In very early days we used often to have three or four cases of disease in a ward of twelve or fifteen beds, and many of us though sometimes exposed for several hours daily passed through perfectly scatheless. Many of us have been amongst all kinds of fevers and other contagious diseases without contracting one; and I do not believe I have ever had even the

mildest attack of scarlet fever though for many years I was daily exposed. How many of us escaped I cannot tell you, but I have no doubt that in some measure the apparent immunity depends on the healthy condition of many of the living particles of the organism, and their power to resist the action of the contagious living particles, and their power to destroy them even though they gain entrance to the body in health; its new tissues being everywhere pervaded with fluid in constant motion, and the products of decay and disintegration being removed as fast as they are formed, may possibly be the explanation.

Professor ORCHARD.—Would "phagocytes" have anything to do with it?

Professor LIONEL BEALE.—By eating up the bacteria?

Professor ORCHARD.—Yes.

Professor LIONEL BEALE.—But everybody does not suffer from bacteria. They only take hold of one of us here and there; but a great many absolutely escape without injury by the minute pests. It would be very interesting and nothing could be more important if we could only find out why it is nurses, physicians and medical students seem to withstand the bacterial armies of invasion. The probability is that in steady good health the noxious organisms, by the constant interchange of fluid and the impossibility of stagnation of the general and interstitial circulation the living particles are soon destroyed if we are healthy. In every part of the living body except the dry tissues on its external surface, and part of the tooth structure, new nutrient particles are being constantly caused to live and take the place of the matter that dies. The products of tissue decay and the matter resulting from death of the old particles *must* be removed, and I conclude that those persons in whom there is a free and proper removal of the products resulting from the death and disintegration continually proceeding, are more likely to escape than those who do not take care to introduce into their organisms sufficient fluid to dissolve the nutritious matter required and to carry away the products of vital activity and tissue disintegration and decay, are more likely to suffer than those in whom the circulation of fluid throughout the organism is free. In short, I believe that those who take a proper quantity of water in the course of every twenty-four hours are more likely to enjoy continuous good health and to resist the influence of noxious bacteria and other deleterious agents, than those

who take strong drinks and a liberal amount of very solid food, more than their organisms need. It is interesting to find that some of the very ancient diseases (particularly leprosy) were probably much the same and quite as terrible as in modern times. Leprosy is very obstinate, and is an example of a contagious disease which is perhaps only contagious after long and frequent exposure. Few seem to take the disease who merely visit the sick, and the physicians who look after these cases usually, I believe, escape altogether. Only those who live in a very insanitary manner for a considerable time are attacked. The disease is attributed, I believe, to bad dried fish. The germs probably grow and multiply in this unsatisfactory food.

The SECRETARY.—I would like to ask one question of Professor Beale. Dr. Chaplin has stated that he does not think small-pox existed in the days of our Lord, or before that period. Could he give us some idea as to when and where small-pox originated? We know it has been a terrible scourge, particularly amongst the aboriginal tribes where Europeans have entered into their country and mingled with them, as it was in North America, but when small-pox was first known in Palestine, and, I suppose, other Eastern countries (for it is a terrible scourge in India at the present day) is a question that I should like answered. As to one point he raised I have always believed that doctors and clergymen are under a special Providence when performing their important duties.

Professor LIONEL BEALE.—It is very difficult to answer our Secretary's question about small-pox, for I have not looked up what has been ascertained concerning the origin of small-pox. The disease has existed for some centuries. In some instances the recent epidemics seem to have been terribly severe, and about twenty years ago I saw one of those sad cases and heard of others of what used to be called hæmorrhagic small-pox which had been contracted in Paris, and was fatal in less than a week from the first symptoms of illness. The disease is very likely to be taken by persons unprotected by vaccination, of whom, however, there ought not to be now one in any part of the country. The minute living contagious particles may be introduced through the breath, and are so light that they may be carried long distances through the air. The living particles do not belong to the bacterial class. No bacterium can be identified

as the factor of the disease. But in small-pox lymph and also in vaccine lymph are very minute particles of living matter which I believe to be the actual disease-carrying germs. These are figured in my work on *Disease Germs*, published about thirty years ago, and also in my report on the cattle plague to the Royal Commission.

Unfortunately the public are not aware that vaccination is practically harmless and absolutely certain in its action as a safeguard. I do not believe that it would be possible to find a single person who had been successfully vaccinated a few years before, would take the disease if exposed to small-pox. The risk of the vaccinated taking the disease after several years is infinitesimal. But this fact, I regret to say, is not as widely known as it should be; and just as there are people whose main object in life seems to be to oppose or object to many things that are reasonable, there are some who condemn vaccination and object to anyone studying the circulation of the blood in a frog's foot and many other harmless and very instructive proceedings. Can there be a greater reproach to us than the terrible epidemic now raging, and which we all know to have been preventible? I feel sure that if the advice of the medical profession had been taken years ago the present epidemic would not have been possible. The enormous sums required for taking proper care of and treating the unfortunate patients who have contracted this absolutely preventible disease, perhaps amounting to two or three hundred thousand pounds, might have been saved.

I am sorry not to be able to offer any opinion whether any of the diseases described by Dr. Chaplin should be regarded as small-pox. The description which has come down to us seems scarcely definite enough to enable us to judge.

The CHAIRMAN.—Perhaps I may be allowed to make a few remarks. I am not an M.D., but I can quite endorse what has already been said that I believe medical men and clergymen, nurses, and attendants on the sick are under a special providence and enjoy a very marvellous immunity from disease. I have worked under five bishops in London, and in various parishes, and I do not think I have shrunk from visiting any form of ailment except small-pox. I *did* "fight shy" of houses where I heard there was small-pox. In my humble capacity I can bear testimony to what has just fallen from Professor Beale,

that certain persons are more susceptible to certain diseases than others from their habits of life. When I was an East-End curate, in my early ministry I remember it was said that sailors were more amenable to cholera than others because of their intemperate and free-and-easy living. I suppose that is so.

On page 2 of the paper Dr. Chaplin says, "Diseases of the eyes are very prevalent in Egypt and Palestine. Probably in no other countries are there larger proportions of blind people." I can testify to Jerusalem and Cairo and Damascus, that although many are not totally blind, there are as many, perhaps, with one eye as two orbs.

There is one matter that I think Dr. Chaplin has omitted as to the cause of blindness, or originating ophthalmia, and that is the flight of the common house-fly from one person to another, and especially in the case of infants. The fly carries the ophthalmic germ from one infant, whose sight is nearly gone, to another wretched infant. The mother does not care to brush them off, she says it is "Allah fated."

In regard to lepers I have seen them between Jaffa and Jerusalem. They do not stand "afar off" now, unfortunately, crying out, "Unclean! Unclean!" but they come and clutch you by the shoulder. There are no police to order the beggars off, and it is therefore very awkward. The Russians have built a hospital there for them.

Professor ORCHARD.—The author at page 9 of the paper, the beginning of the last paragraph, says, "That a local outbreak of *tzar'aath* in the skin should be unclean, and that when it had covered all the skin it was to be pronounced clean, seems at first somewhat puzzling"; but I suppose the explanation might be that when the disease had covered all the skin it had exhausted its energy. That would seem to be the natural explanation. This reminds me of a remark of Lord Bacon's on speaking of the leper. "A leper, when all covered over with sores, might be pronounced clean; but when he was partially leprous he was pronounced unclean because when he was covered with leprosy people would be aware of him, but when he was partially so they would not, and so he might do great harm in spreading disease."

With regard to demoniacal possession, on page 5, Dr. Chaplin seems to doubt whether the thing goes on in the present day; but I read, not very long ago, accounts written by missionaries of the

presence of this kind of thing in China and also in Africa, and, for aught one knows, it may be in this country too. I could have wished that Dr. Chaplin had written a little more with regard to this interesting and mysterious subject. It would appear, as far as I know, that it never takes place unless there is, first, a surrender of the will on the part of the human being. He must surrender his will to the devil before anything of this kind ever takes place.

I am sure our thanks are heartily due to Dr. Chaplin, and hardly less so to Professor Lionel Beale for the valuable remarks he has made to us.

Rev. JOHN TUCKWELL.—I would just call attention to the fact that with regard to what has been said concerning Bacon's remark, in the case of Gehazi, who is said to have gone out from the presence of Elisha "a leper as white as snow," he was afterwards admitted into society; so that he was brought into contact with society at the time, and they do not seem to have thought of contagion from him, for he was afterwards relating the wonderful things done by Elisha. So that it hardly seems that Bacon's explanation is worth anything.

As to demoniacal possession it certainly should not be confounded with madness or with epilepsy, for in the Gospel of St. Matthew you have, in one verse, the things used, demoniacal possession and σεληνιακός, the Greek word for lunacy. It is peculiar, too, that in three languages, the Greek, Latin, and our own, we have lunacy connected, in some way or other, with the moon. The Greek word is "moon-struck"; the Latin word is "moon-struck"; and we have the term "moon-struck" in our time.

Leprosy seems to have gone back to an early period. It seems to have produced the growth of long white hairs. So that in the early history of our race we seem to have an allusion to some of those very remarkable and interesting diseases.

I think the paper is very suggestive, and a very valuable one and I am glad to have heard such remarks as we have had from Professor Beale.

Communications.

The following note on Dr. Chaplin's paper has been forwarded by Dr. E. W. Gurney Masterman, F.R.C.S., D.P.H., of the English Mission Hospital, Jerusalem.

The "uncorrected proof" copy of Dr. Chaplin's paper, "On some diseases mentioned in the Bible," has just reached me to-day, May 21st, and therefore too late for me to write before the meeting. As I have for the greater part of the last ten years been practising as a medical man in various parts of the Holy Land, I venture to add a few criticisms.

It must always be, as Dr. Chaplin points out, a matter of much uncertainty to identify the "diseases of the Bible" from the extremely meagre descriptions we hear. This identification too is all the harder from the fact that the accounts given are quite unscientific. A medical man to-day would often find it hard to recognize a disease from the brief account of a layman, specially one entirely ignorant of science. In this land of Palestine I almost daily receive descriptions of diseased conditions, which, on examination of the patient, turn out to be utterly incorrect. Then, secondly, it is now generally recognized that there has been a slow evolution of disease, some may, nay, probably have, disappeared, others, unknown in Old Testament times, are now prevalent. Tubercular diseases, specially phthisis (*i.e.*, consumption) which are now increasingly rampant in the cities of Palestine, would appear to have been quite rare early in last century. Influenza here, as in Europe, has been recently reintroduced, and receives the name among the natives to-day of *Abo rikab*, *i.e.*, the father of the Knus, which, in Dr. Chaplin's time, seems to have been compared to dengue. Scarlet fever is exceedingly rare, and many doctors of great experience in the land deny that it occurs, but German measles, which closely simulates it, is a common epidemic.

While then it is hopeless to be scientifically sure regarding diseases in such ancient times, the best hope we can have of coming to a right conclusion lies in studying, as Dr. Chaplin has done, those diseases which are common in the land, and specially among the Jews, to-day.

Without committing myself to any theological opinion regarding the vexed question of *demoniacal possession* I would point out that

all, or nearly all, forms of madness are almost universally to-day asserted by the people of Palestine to the work of demons, or *jinns*. The very word used for lunacy being *mejnūn*, meaning literally "possessed by devils." Among all classes, Christians, Jews, and Moslems, this is the pathology of lunacy, and the remedy always, unless the case speedily recovers spontaneously, or while taking "franju" medicine, is exorcism in some form or another. In some cases patients are left at sacred spots dedicated to *El Khudr*, *i.e.*, "The Green," the Elijah of Jews and Moslems, the St. George of Christians. Such places are usually underground caves, as those at El Khudr (the Convent of St. George) near Jerusalem, at the Convent of Elijah on Mount Carmel, and in the Synagogue of Joba, near Damascus. In other cases more definite exorcism is performed distinctly with the idea of drawing or driving out the demon causing the disorder. It is a favourite trick of these exorcisers, who are usually Moslem sheiks, to graphically describe to the patient how the devil is gradually drawn downwards till finally he quits at one of the great toes. I have had it gravely described to me that the toe from which the devil was finally expelled became inflamed shortly afterwards, showing clearly his malignant influence at the moment when he had to abandon his victim. The Spanish Jews of Jerusalem have an ancient and elaborate ritual called "Indulca," which is used for such cases. It is manifestly a form of exorcism. The *mejnunīn* are, if harmless, treated with a considerable amount of respect for fear of the demon, but if violent they are avoided as much as possible. A violent maniac is not uncommonly chained up and his food passed to him through a crack in a closed door.

Any European doctor curing a case of madness would certainly be described by the ignorant *fellahin*, Eastern Jews (*e.g.*, in Damascus) and a large proportion of the ordinary townspeople, as having turned out the devil from one "possessed."

Fever and bloody flux are so commonly associated along the Mediterranean that there is little need to look for an interpretation, such as must occur to a doctor practising only in England, of typhoid with hæmorrhage. A very large proportion of unlocated cases of malarial fevers end in dysenteric symptoms, *i.e.*, the passage of blood and slime from the bowel, and before the days of quinine this must have been still more common.

Herod Agrippa's disease has long seemed to me to admit of a more natural explanation than that Dr. Chaplin gives, that "excoriations . . . would very likely become infested with worms," *i.e.*, maggots—as we read of occurring in the case of Herod the Great. Two observations made in Palestine to-day appear to me to throw light on the occurrence. Firstly, that among the common people (I find it every week when I see the *fellahin* of Siloam at my dispensary there) almost all severe abdominal pain is put down to "worms," *i.e.*, to the "round worms" and "tape worms" with which the people, specially the fellahin, are infested. Secondly, that it is quite common, I have witnessed it myself, that when a patient is extremely ill, for large quantities of these worms to be discharged both by mouth and rectum shortly before death. Sometimes indeed the worms themselves give rise to the most alarming symptoms, as I witnessed in a patient who was only relieved when she vomited up between fifty and sixty "round worms." The first idea and then the appearance of the worms would readily give rise to the *popular* version (notice Josephus does not mention it) that Herod Agrippa was "eaten of worms." The version of his death which we have in Josephus would fit it best with a "strangulated hernia," or some other form of abdominal obstruction.

Regarding *Job's disease* I quite agree with Dr. Chaplin, but mention it because I have seen it suggested that the disease may have been a form of "Oriental boil." This "boil" known as the "Aleppo button," Baghdad date," etc., never occurs in Palestine *de novo*. I have seen hundreds of Jews from both Aleppo and its neighbourhood and Baghdad and have never failed to find evidence of the "boil" either actually discharging or in the form of a scar—usually on the face; I have even known a child who suffered for many months who was only in Aleppo for, I think, fifteen days. Further the "Oriental boil" in such cases is usually either single or at most in half a dozen places, and though chronic and unresponsive to treatment does not cause any great suffering.

Dwellers in Jericho are apt to get a crop of chronic boils ("Jericho boils") at some seasons of the year, but it is very doubtful if this is in any way a "specific disease."

The most original and by far the most important part of Dr. Chaplin's paper is that in which he gives his views on *leprosy*.

It has always seemed to me that the attempt to square the accounts in Leviticus with the physical signs of the disease *Elephantiasis Græcorum*, popularly known as leprosy, is quite hopeless. I think that Dr. Chaplin is quite correct in his opinion that in the Old Testament descriptions we have references to a number of skin diseases then considered contagious, such for example as "ringworm" and "favus," both of which are exceedingly common among the Jews of this land to-day. It is probable, however, that as the conditions of life have been largely changed the manifestations of disease may be so much altered that we cannot recognize familiar diseases, or, equally probably, some of the particular diseases here referred to may have been stamped out.

There is some probability that the leprosy of the New Testament may have been the disease we now know; indeed the references we have to the lepers are constantly being brought to one's mind by seeing the wandering groups of lepers in the land to-day. Leprosy, *i.e.*, *Elephantiasis Græcorum*, is not now a common disease in Palestine, but for many reasons the lepers are very much in evidence. They are all segregated in four centres, viz., Ramleh, Jerusalem, Nablous and Damascus, where they have houses provided for them by the Government. They, however, live by begging, and haunt for that reason the most public places as well as freely mixing with the general population in the roads and markets; probably in the land, *i.e.*, in the "Holy Land" proper, there are not more than 150 individuals.

With the exception of those gathered in the Moravian Leper Hospital in Jerusalem, at present numbering fifty-four, these unfortunates receive no medical aid; it is freely offered to them by the Moravians and others, but they do not care for it. One medical man in the land told me he had made persistent efforts to help them, but they will not continue any treatment except when under the discipline of a hospital, and to that many object. Most of the lepers are *fellahin* from the villages and the cases usually appear to occur sporadically. I have, during the past ten years, seen but three genuine cases of leprosy among Jews.

Many of the analogies made popularly between leprosy and sin are unfortunate. Leprosy is (1) *not* inevitably fatal; cases of anæsthetic leprosy may after long years spend their violence, as it were, leaving the patient a wreck, it is true, but free of that

disease to die of quite other causes. (2) It is *not* hereditary. When children are isolated from leprous parents at once they may grow up quite healthy to my knowledge; and (3) it is only very slightly *if at all* contagious.

The SECRETARY.—The next meeting will be the Annual Meeting to be held on 26th May. The date is earlier than usual because it is to meet the convenience of the distinguished man who is to give us the annual address, viz., General Sir Charles Wilson, and I hope we shall have a good and successful meeting, which will depend on members all doing their best to make it so.

The Meeting then adjourned.

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